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INTER-OFFICE CORRESPONDENCE
RICHMOND, VIRGINIA

To: Dr. W. F. Gannon

Date: November 28, 1977

From: Mr. L. F. Meyer

Subject: 1978 Plans - New Cigarette Products Division

Each of the Project Leaders has prepared a detailed outline of plans for 1978, including target dates. These are attached for your perusal. With this cover memo, I will summarize only the major activities planned for 1978, broken down into four basic categories; New Products, Brand Improvements, Filter/Process Development, and Cigarette Technology.

NEW PRODUCTS

The major emphasis will be finalization of the BETA 85 and 100 mm product followed by development of menthol companions. A new program, Project 55, will be second priority in 1978. This will be a 5 mg tar, 5 mg CO product. Following these two priorities, efforts will continue on developing low tar products in the 2-4 and 1-2 mg range. Strong consideration will also be directed to development of a free standing menthol product with a single digit tar number, as well as an 85 mm low tar slim product.

BRAND IMPROVEMENT

Two major considerations will dominate our efforts in this area - lower tar versions of all our major brands and the establishment of optimum menthol levels for our menthol products. Marlboro Lights, both 85 and 100 mm, will be first priority along with Merit menthol levels. Of secondary importance will be 14 mg tar Marlboro and B&H candidates along with a Virginia Slims Lights candidate. Of continued importance will be establishment of optimum plugwraps and tipping papers for our diluted brands.

FILTER/PROCESS DEVELOPMENT

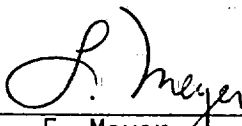
In this area highest priority will be given to the wrapless CA program and Project EXPO, followed by process definition of the high speed extrusion line. Several process development programs currently of secondary priority could emerge as high priority programs for 1979. These include formed and/or foamed CA filters and flavor coated cigarette papers. Although not officially carried as programs of our Division, we will be providing major assistance to both the electrical and laser perforating programs.

CIGARETTE TECHNOLOGY

These activities are diverse and all of major importance as they provide the technology support for new product development and brand improvement. A new program, paper composition, will receive major

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attention in 1978. Our Smoker Simulator program will be heavily involved in gas phase studies, product studies, and continued evaluation of the physical properties of cigarettes. Instrument development should see the DDI (Digital Dilution Instrument) and the DPT (Digital Porosity Tester) introduced into Manufacturing. A major attempt will be made during 1978 to correlate all of our information on dilution and publish a "white paper" on the subject. And, finally in 1978, we will begin leaf training for several people in the Division.



L. F. Meyer

/bjn

cc: Dr. R. B. Seligman (w/o attachments)
Mr. P. N. Gauvin (w/o attachments)
Dr. W. A. Geiszler (w/o attachments)
Mr. W. G. Houck (w/o attachments)
Mr. W. A. Nichols (w/o attachments)

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1978 PLANS

PROJECT TITLE: NEW PRODUCT DEVELOPMENT

CHARGE CODE: 2100

PROGRAMS:

I. NEW PRODUCTS

A. BETA Program

1. 85 model
 - Continue development to improve product 1st Quarter, 1978
 - Specifications to MFG 1st Quarter, 1978
2. 100 Model
 - Continue development to improve product 1st Quarter, 1978
 - Specifications to MFG 1st Quarter, 1978
3. Menthol Candidates
 - Develop acceptable candidates and initiate consumer testing
 - 85 Model 1st Quarter, 1978
 - 100 Model 1st Quarter, 1978
 - Specifications to MFG 2nd Quarter, 1978

B. 5 mg Candidate, Maximum Gas Phase Reduction

- Project 55 - 5 mg tar, 5 mg or less CO
- VP testing 2nd Quarter, 1978
 - National testing 3rd Quarter, 1978

C. 2-4 mg Candidate

- Determine filter and blend specifications and initiate consumer testing
- 85 Regular 2nd Quarter, 1978
 - 85 Menthol 3rd Quarter, 1978
 - 100 Regular and Menthol 4th Quarter, 1978

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- D. Free-standing Menthol Cigarette, 4-8 mg Tar
1. Initial modelling
 - Menthol polymer as a handle?
 - Does one type of leaf receive menthol better than another?3rd Quarter, 1978
 2. Candidates for consumer testing4th Quarter, 1978
- E. Project Elite, 1-2 mg Candidate
1. Determine filter specs, evaluate blends3rd Quarter, 1978
 2. Candidates available for consumer testing4th Quarter, 1978
- F. Marlboro 85 with Reduced CO
1. Re-engineer filter specs
 - New targets: 14-15 mg Tar, 30+% dilution, 30-35% CO reduction4th Quarter, 1977
 2. Candidate for VP testing vs. current Marlboro1st Quarter, 1978
- G. Slim Cigarettes
1. Slim 85, 8-9 mg
 - National testing vs. Merit 851st Quarter, 1978
 2. Slim 100, 5-6 mg
 - VP testing
 - National testing, if warranted1st Quarter, 1978
2nd Quarter, 1978
- H. Designed Cigarette Papers
1. Complete National POL testing of designed cigarette papers to determine feasibility1st Quarter, 1978
 2. If warranted, initiate consumer testing of accepted design vs. current production cigarette3rd Quarter, 1978

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II. CIGARETTE COMPONENT INVESTIGATIONS - NEW PRODUCTS

A. Investigation of CA Substitutes

1. Celanese CA web material
 - Initiate product modelling at 2-4 mg level 1st Quarter, 1978
 - Determine consumer acceptability 2nd Quarter, 1978
2. Polypropylene alternate to CA (Hercules)
 - Determine product acceptability 2nd Half, 1978

B. Menthol-Release Polymer

1. If warranted, initiate National consumer testing of active carbon-menthol cigarette 1st Quarter, 1978
2. Determine consumer acceptability of mixed pack, Regular and Menthol cigarettes 2nd Quarter, 1978

C. LTF Cigarette Products

1. Initiate modelling of 1-2 mg LTF product 3rd Quarter, 1978
2. If warranted, initiate consumer testing 4th Quarter, 1978

D. Other Programs

Evaluation of unique fibers, filter additives or blend modifications for reduced particulate and gas phase Continuing

III. HUMAN SMOKER SIMULATOR

A. Basic Studies

1. Smoking profile and subjective comparison of different mouthpieces for profile recorders 1st Quarter, 1978

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2. Effect of high dilution on smoker parameters 1st Quarter, 1978
 3. Initiate studies to determine effect of various smoker parameters and cigarette designs on NO and CO delivery 2nd Quarter, 1978
 4. Examination of smoking profiles at various menthol levels and resulting menthol deliveries 3rd Quarter, 1978
 5. Influence of filter characteristics or designs on smoker parameters Continuing
 6. Accumulate data on nicotine residue in filters Continuing
- B. Equipment Modifications
1. Complete modifications for PXP CO and NO analysis off the Simulator 1st Quarter, 1978
 2. On-line Computer capability 2nd Quarter, 1978
 3. Construct and evaluate modified Simulator 4th Quarter, 1978
 4. New smoker profile recorder prototypes Continuing
- C. Product Studies
1. Studies in conjunction with consumer tests on new products Continuing
 2. Studies on new filter components and special blends Continuing
- D. Methods of Collection and Treatment of Data
1. Complete data input to develop computer model for projecting deliveries to smoker 1st Quarter, 1978

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2. Increase computerization of
data storage and retrieval Continuing
3. Augment information on
individual panelists Continuing

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1978 PLANS

PROJECT TITLE: BRAND DEVELOPMENT

CHARGE CODE: 4010

PROGRAMS:

I. NEW CIGARETTE PRODUCTS

- | | | |
|----|---|-------------------|
| A. | 100 mm Marlboro Lights
- National Distribution | 1st Quarter, 1978 |
| B. | 10 mg Slims Lights
- thru National POL | 1st Quarter, 1978 |
| C. | 8 and 12 mg Menthol 85's
- National Testing | 2nd Quarter, 1978 |
| D. | Marlboro Lights 85 and 100
Menthol | 4th Quarter, 1978 |

II. BRAND MODIFICATIONS

- | | | |
|----|--|-------------------|
| A. | Marlboro 85 Tar Reductions
- 14 mg candidate, thru
National POL | 1st Quarter, 1978 |
| | - 12 mg candidate, thru
National POL | 1st Quarter, 1978 |
| B. | Merit Menthol Modifications
- 85 mm candidate, thru
National POL | 1st Quarter, 1978 |
| | - 100 mm candidate, thru
National POL | 1st Quarter, 1978 |
| C. | Virginia Slims Tar Reductions
- 14 mg candidate, National
testing | 2nd Quarter, 1978 |
| | - 10 mg candidate, National
testing | 2nd Quarter, 1978 |
| D. | 14 mg Marlboro 100's | 4th Quarter, 1978 |
| E. | 14 mg B&H 100's | 4th Quarter, 1978 |
| F. | 1 mg B&H Deluxe Filter Modifications
(replacement of Filtrona with Reg.
acetate) thru National POL | 1st Quarter, 1978 |

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- | | | |
|----|---|-------------------|
| G. | Low Tar and CO Multifilter
- National testing | 3rd Quarter, 1978 |
| H. | "Firm CA" Marlboro Lights
- Monitor test market
"Firm CA" alternate
- National testing | 1st Quarter, 1978 |

III. COMPONENT INVESTIGATIONS

- | | | |
|----|---|------------------------|
| A. | Alternate Carbons | Continuous |
| 1. | Haycarb coconut shell
- initiate test market | 1st Quarter, 1978 |
| 2. | KOWA American
- National testing | 2nd Quarter, 1978 |
| B. | Filters | Continuous |
| 1. | Filtrona Wrapless (NWA)
- National testing | 2nd Quarter, 1978 |
| 2. | P.M. Wrapless | See ¹ below |
| C. | Tippings | Continuous |
| 1. | Benkert EP on Alpine
- Monitor dilution | 1st Half, 1978 |
| 2. | P.M. EP Tipping
- Assist in development | Continuous |
| 3. | P.M. Mechanically Perforated
- Assist in development | Continuous |
| D. | Cigarette Papers | Continuous |
| 1. | Wattens with Esparto
- National testing | 1st Quarter, 1978 |
| 2. | Ecusta High Citrate
- thru VP | 1st Quarter, 1978 |
| 3. | Electrically Perforated
- National testing | 1st Quarter, 1978 |
| E. | Porous Combining Wraps | Continuous |
| 1. | Ecusta Porowraps
- Factory trial | 1st Quarter, 1978 |

¹ As soon as filter producing technology is complete

2. Schweitzer 592 & 612 equivalent
- Factory trial 1st Quarter, 1978

IV. SPECIAL INVESTIGATIONS

- A. Factors affecting cigarette dilution uniformity² 2nd Quarter, 1978
B. Effect of ET and high citrate papers on smoke delivery 1st Quarter, 1978
C. Dilution/RTD ratio studies 3rd Quarter, 1978
D. Menthol Continuous

V. INSTRUMENTS

- A. Digital Dilution Instrument (DDI)
1. MFG Center on line 1st Quarter, 1978
2. Stockton St. MFG on line 1st Quarter, 1978
3. Louisville MFG on line 1st Quarter, 1978
B. Digital Porosity Tester (DPT)
1. Development on line 1st Quarter, 1978
2. R&D Quality Control on line 2nd Quarter, 1978
3. MFG Quality Control on line 4th Quarter, 1978
C. Alternate Dilution Measuring Head
- prototype 1st Quarter, 1978

VI. COST SAVINGS Continuous

VII. MIcroPROCESSORS

- Add additional processor to handle Digital Balance and Laser Circumference Instrument 1st Quarter, 1978

VIII. PUBLICATIONS

- A. Cigarette Technology Manual
- (replacement for filter manual) 4th Quarter, 1978
B. PDI Paper 2nd Quarter, 1978
C. DDI Technical Bulletin 1st Quarter, 1978
D. DPT Technical Bulletin 4th Quarter, 1978

² Joint study with Celanese Corporation

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1978 PLANS

PROJECT TITLE: Filter and Cigarette Process Development

CHARGE CODE: 2105

PROGRAMS:

I. WRAPLESS FILTER

Develop a wrapless filter making process using microwave energy to bond CA fibers.

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|--|-------------------|
| A. Refinement of process and equipment for production use. | 2nd Quarter, 1978 |
| B. Process definition and transfer to MFG Engineering. | 3rd Quarter, 1978 |

II. FORMED FILTER

Develop a process for forming patterns on the exterior of wrapless filters.

- | | |
|--|-------------------|
| A. Equipment development and testing. | 1st Quarter, 1978 |
| B. Prototype production equipment development. | 3rd Quarter, 1978 |
| C. Process definition. | 4th Quarter, 1978 |

III. HIGH SURFACE AREA CA

Using microwave wrapless plugmaking technology to develop a method to increase surface area of CA with the addition of liquid additives.

- | | |
|-----------------------------|-------------------|
| A. Process experimentation. | 2nd Quarter, 1978 |
| B. Process definition. | 4th Quarter, 1978 |

IV. PROJECT EXPO

Develop a foamed thermoplastic filter rod with >90% void space and <50% of the weight of a comparable CA fiber filter.

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- A. Process experimentation, lab scale. 3rd Quarter, 1978
- B. Scale-up process to production equipment. 4th Quarter, 1978
- V. FOAMED CA
- Develop a foamed cellulose acetate filter of equal weight and efficiency as a fiber CA filter.
- A. Basic lab experiments. 2nd Quarter, 1978
- B. Develop prototype equipment. 4th Quarter, 1978
- VI. EXTRUSION SYSTEMS DEVELOPMENT
- A. Testing of high speed extrusion line. 1st Quarter, 1978
- B. Process definition and transfer of details to MFG Engineering. 2nd Quarter, 1978
- VII. HIGH RTD-LOW EFFICIENCY FILTER
- Develop a process for the manufacture of high RTD-low efficiency CA filters.
- A. Feasibility study. 1st Quarter, 1978
- B. Prototype equipment development. 3rd Quarter, 1978
- VIII. ASSISTANCE TO MANUFACTURING
- Assist MFG in process problems involving adhesives, extrusion, etc. Continuous
- IX. ADVANCED PROCESS TECHNOLOGIES
- Study and investigate advanced technologies pertaining to filter and cigarette making processes. Continuous

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1978 PLANS

PROJECT TITLE: Paper and Filler Modification

CHARGE CODE: 4009

PROGRAMS:

I. ELECTRICAL PERFORATING

- | | | |
|----|---|-------------------|
| A. | Develop electrically perforated tipping papers for Merit 85's and 100's | 1st Quarter, 1978 |
| B. | Develop a perforating process for tipping paper based on 15 pairs of electrodes per band of holes | 1st Quarter, 1978 |
| C. | Determine optimum tipping paper and ink compositions for improved perforating performance. | 2nd Quarter, 1978 |
| D. | Develop electrically perforated white tipping with acceptable appearance. | 3rd Quarter, 1978 |
| E. | Improve the perforator and perforating process in conjunction with MFG. | Continuous |

II. LASER PERFORATING

- | | | |
|----|---|-------------------|
| A. | Develop a laser perforating process for perforating large holes in tipping paper: | |
| | (1) Using a 4-beam CO ₂ laser; | 2nd Quarter, 1978 |
| | (2) Using a single beam laser. | 3rd Quarter, 1978 |
| B. | Develop a laser perforating process for perforating small holes in tipping paper. | 3rd Quarter, 1978 |
| C. | Explore techniques for diluting the assembled cigarettes via laser perforating | Continuous |

III. WRAPPER COMPOSITION STUDIES

- | | | |
|----|--|-------------------|
| A. | Determine the effect of ash content of cigarette wrapper on coal strength, cigarette burn rate, and gas phase delivery | 1st Quarter, 1978 |
|----|--|-------------------|

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- B. Determine the effect of the size press coating on wrapper properties. 1st Quarter, 1978
- C. Determine the combined effects of ash content and burn chemical on the burning properties of the cigarette. 2nd Quarter, 1978

IV. CIGARETTE TECHNOLOGY

- A. Determine the effect of draft on gas phase delivery for various porosity cigarette wrappers. 1st Quarter, 1978
- B. Develop a quality control procedure for measuring the pressure drop of perforated tipping papers with the Philip Morris test clamp. 1st Quarter, 1978
- C. Determine the effect of temperature on paper permeability. 2nd Quarter, 1978
- D. Correlate the physical properties of adhesive systems with performance in plugmaking and cigarette assembling operations. 3rd Quarter, 1978

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IV. DISCUSSION

A. Determine the effect of draft on
...the properties of the

B. Develop a suitable control procedure
...the properties of the

C. Determine the effect of temperature
...the properties of the

D. Determine the effect of humidity
...the properties of the

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W. F. GANNON

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